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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,471	03/31/2000	Yuliya Anatolyevna Akulova	1-4-2	2480

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HITT GAINES & BOISBRUN P.C.
P.O. BOX 832570
RICHARDSON, TX 75083

EXAMINER
NGUYEN, TUAN M

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/540,471	AKULOVA ET AL.	
	Examiner	Art Unit	
	Tuan M Nguyen	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Paul Ip

PAUL IP
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-8 of patent US 6,437,372. This is a provisional double patenting rejection since the conflicting claims have been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced patent and would be covered by any patent granted since the referenced patent and the instant application are claiming common subject matter, as follows: Claims 1 and 11 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-3 of patent US 6,437,372.

Claims 1-3 of patent US 6,437,372 recite an optoelectronics device comprising a mesa having first and second sides, wherein the mesa includes a first layers and a intrinsic layer disposed over said first/second layers disposed over said first layer; blocking layers disposed

along said first and second sides of said mesa; and diffusion blocking spikes disposed between each of said first/second sides and said blocking layers and spikes not creating a pn junction in said second layer; wherein first/second layers is n-type InP, and said blocking layers are semi-insulating InP and diffusion blocking spikes disposed between each of said first/second sides are Al. Claims 1 and 11 of this Application recite an optoelectronics device comprising a doped layer and a dopant barrier located between said doped layer and a layer , wherein said dopant barrier includes at least two layers and does not form a pn junction with said doped layer; and a mesa having a substrate, a first dopant barrier having at least two layers disposed over said substrate and at least one layer disposed over said first dopant barrier and said first dopant barrier not forming a pn junction with said substrate of said at least one layer.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-20 are vague and indefinite.

For example claims 1 and 11 recite a doped layer and a dopant barrier located between said doped layer and a layer, wherein said dopant barrier includes at least two layers and does not form a pn junction with said doped layer. The claims fail to provide any structure to incorporate with the doped layer, the dopant barrier and a layer as recited in the claims, which render the claims confusing, vague and indefinite.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kahen et al ('404).

With respect to claims 2 and 11 Kahen et al disclose mesa having a substrate (317), a doped layer (313), a dopant barrier (315) located between said doped layer and a layer (316) , wherein said dopant barrier includes at least two layers and does not form a pn junction with said doped layer, note col. 3 line 32 to col. 6 line 50, see fig. 5.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2-10 and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahen et al ('404) in view of Anselm et al ('114).

With respect to claim 2, Kahen et al disclose all limitations as set forth in the claim 1 except for the first/second dopant barrier layers. Whereas Anselm et al disclose the first/second dopant barrier layers, note cols. 3-4, see figures 1-2. For the benefit of the optoelectronic device, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Kahen with the multiple dopant layers as taught or suggested by Anselm.

With respect to claims 3-5, Kahen et al show in fig 1-2 a substrate, a first/second dopant barrier, current confinement, note col. 1 line 10 to col. 7 line 32.

With respect to claims 6-10 and 12-20, Anselm et al show in figures 1-2 all limitations of the claims, note col. 1 line 10 to col. 8 line 34.

Response to Arguments

5. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Citation Of The Pertinent References

6. The prior art made of record and not relied upon us considered pertinent to applicant's disclose.

The patent to Ogihara et al (US patent 6,222,208) discloses light emitting diode and light emitting diode array.

The patent to Hayafuji et al (US patent 5,796,127) discloses high electron mobility transistor.

The patent to Otsuka et al (US patent 5,319,657) discloses semiconductor laser of modulation doping quantum well structure with stopper against dopant dispersion and manufacturing method thereof.

The patent to Kahen et al (US patent 5,212,705) discloses ALAS ZN-stop diffusion layer in ALGAAS laser diodes.

Communication Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247. The examiner can normally be reached on 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Paul Ip
SPE
Art unit 2828

TMN
May 10, 2003